

CLAIMS

The embodiments of the invention in which an exclusive property or right is claimed are defined as follows. Having thus described the invention
5 what is claimed is:

1. A sensor testing system, comprising:

a pressure rail having a top surface and a bottom surface and at least
10 one pressure inlet to a pressure channel located within said pressure rail;

a plurality of patch depressions formed into a plurality of sealing
surfaces on said top surface of said pressure rail upon which at least one
patch among a plurality of patches is located;
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a plurality of antenna blocks disposed upon said pressure rail, wherein
each antenna block thereof includes at least two antennas and is
respectively located on said pressure rail in order to provide wireless data
indicative of pressure and temperature conditions associated with each
20 patch among said plurality of patches.

2. The system of claim 1 wherein each of said patches among said
plurality of patches comprises a SAW patch.

25 3. The system of claim 1 wherein said pressure rail comprises a SAW
tire pressure measurement patch wireless test rail.

4. The system of claim 1 further comprising a plurality of BNC
connectors respectively connected to said plurality of antenna blocks,
30 wherein each BNC connector thereof is respectively connected to and
protrudes from each antenna block thereof.

5. The system of claim 1 wherein each sealing surface among said plurality of sealing surfaces contains a groove that retains a respective O-ring in place.

5 6. The system of claims 5 wherein said groove comprises a dovetail groove.

7. A SAW sensor testing system, comprising:

10 a pressure rail having a top surface and a bottom surface and at least one pressure inlet to a pressure channel located within said pressure rail;

a plurality of SAW patch depressions formed into a plurality of sealing surfaces on said top surface of said pressure rail upon which at least one
15 SAW patch among a plurality of SAW patches is located;

a plurality of antenna blocks disposed upon said pressure rail, wherein each antenna block thereof includes at least two antennas and is respectively located on said pressure rail; and

20 a plurality of BNC connectors respectively connected to said plurality of antenna blocks, wherein each BNC connector thereof is respectively connected to and protrudes from each antenna block thereof in order to provide wireless data indicative of pressure and temperature conditions
25 associated with each SAW patch among said plurality of SAW patches.

8. The system of claim 7 wherein each sealing surface among said plurality of sealing surfaces contains a groove that retains a respective O-ring in place.

30 9. The system of claims 8 wherein said groove comprises a dovetail groove milled into said sealing surface for holding said respective O-ring in

place.

10. The system of claim 8 wherein said respective O-ring comprises a silicone O-ring.

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11. The system of claim 7 wherein said pressure channel is drilled into said pressure rail.

12. The system of claim 7 wherein said SAW patch reacts to both
10 temperatures and pressure while being interrogated wireless as a fixed distance in order to collect test data indicative of said SAW patch.

13. The system of claim 9 further comprising a plurality of cap screws for holding in place an antenna block among said plurality of antenna blocks and
15 for sealing said respective O-ring against a respective antenna block among said plurality of antenna blocks.

14. The system of 7 wherein said at least two antennas are connected to a respective antenna block among said plurality of antenna blocks utilizing a
20 silicone adhesive.

15. A sensor testing method, comprising the steps of:

providing a pressure rail having a top surface and a bottom surface
25 and at least one pressure inlet to a pressure channel located within said pressure rail;

forming a plurality of patch depressions into a plurality of sealing surfaces on said top surface of said pressure rail upon which at least one
30 patch among a plurality of patches is located;

disposing a plurality of antenna blocks upon said pressure rail,

wherein each antenna block thereof includes at least two antennas and is respectively located on said pressure rail; and

thereafter generating from said plurality of antenna blocks, wireless
5 data indicative of pressure and temperature conditions associated with each patch among said plurality of patches.

16. The method of claim 15 further comprising the step of configuring
each of said patches among said plurality of patches to comprise a SAW
10 patch.

17. The method of claim 15 further comprising the step of configuring said
pressure rail to comprise a SAW tire pressure measurement patch wireless
test rail.

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18. The method of claim 15 further comprising the step of respectively
connecting a plurality of BNC connectors to said plurality of antenna blocks,
wherein each BNC connector thereof is respectively connected to and
protrudes from each antenna block thereof.

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19. The method of claim 15 further comprising the step of configuring
each sealing surface among said plurality of sealing surfaces to form a
groove that retains a respective O-ring in place.

25 20. The method of claims 19 wherein said groove comprises a dovetail
groove.